The Germplasm Ambassador

Plant physiologist Barbara M. Reed has logged tens of thousands of miles over the last several years flying from Oregon to Kazakhstan, Poland, and Germany. The major goal of her trips is to help scientists in these countries learn new methods for storing vegetatively propagated plant genetic resources.

She received a grant from USDA's Foreign Agricultural Service to teach cryopreservation protocols to international scientists. The researchers, who all work for their governments, visited Corvallis for 2 weeks to see how ARS preserves germplasm and to practice the new techniques. They then returned home to use what they learned to save crop plants as a basic insurance policy.

Reed traveled several times to these nations, during a period of 2 years, to ensure that the cryopreservation technology had been successfully transferred.

"Germplasm is of international interest," says Reed, who is with the ARS National Clonal Germplasm Repository in Corvallis. "We can't store everything in the United States, and it's important for each country to safeguard crop plants that are at risk of loss." Reed also says that these plants have genes that could be invaluable in crop breeding and development, to overcome a plant-disease epidemic, or increase nutrient or vitamin content of a crop.

Reed has been to Poland twice to help scientists preserve currants and to Germany twice to study currants, cherries, and ash trees. She has traveled to Kazakhstan three times and will likely go back three more times. The Kazakh researchers started cryopreserving currants and blackberries with basic methods and will now apply the new techniques to apples and apricots.

Reed has an additional grant from the ARS Former Soviet Union Scientific Cooperation Program with scientists in Kazakhstan. During the first 3 years, she helped them build a laboratory and plan research projects. The second 3 years will involve cryopreserving crops at their genebank.

"Our National Plant Germplasm System promotes free exchange of plants worldwide," Reed says. "These countries will be able to store germplasm of plants that may not be found in the United States but may one day be of interest to us or other nations."

The germplasm laboratory in Kazakhstan is in the city of Almaty, which means "Father of Apples." Reed calls it a "center of genetic diversity of apples and apricots," because the area has a wild diversity of these fruit crops. Both local and international researchers can learn about the genetics of apples and apricots from these samples.

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Apple variety trials from the apple breeding program at the Institute of Pomology and Floriculture, Skierniewice, Poland.

As Kazakhstan continues to develop, fields, farms, and pastures are expanding into areas where these wild fruits flourish. Cryopreserved collections will help to conserve the important genetic diversity of these crops.—By **David Elstein,** formerly with ARS.

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